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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/661,950 | 09/14/2000 | Arto Leppisaari | 442-009779-US(PAR) | 9662 |

7590 02/23/2004
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EXAMINER

MEW, KEVIN D

| ART UNIT | PAPER NUMBER |
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2664

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DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,950

Applicant(s)

LEPPISAARI ET AL.

Examiner

Kevin Mew

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4, 6 & 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Claim Objections

1. Claim 16 is objected to because of the following informalities: the word "or" between the phrase "a mobile terminal of a cellular network" and the phrase "a computer terminal that communicates through a mobile terminal of a cellular network" is missing in line 2 of the claim. It is suggested the word "or" be inserted in between these two phrases to specify the said terminal is either "a mobile terminal of a cellular network" or "a computer terminal that communicates through a mobile terminal of a cellular network."

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7, which is dependent on claim 4 but no longer on claim 6, recites the limitation "said packet channel request" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4-6, 8, 13, & 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (US Patent 6,532,225).

Regarding claims 1, 5, 6, & 16, Chang discloses a Medium Access Control layer in GPRS (**packet switched data transmission system and packet transfer mode**, see lines 21-22, 55, col. 3), which comprises the process of gaining access to a traffic channel (**allocating a radio resource**, see lines 30-32, col. 4) for real-time applications (**realtime service**, see lines 21-22, col. 3) between a mobile unit (**terminals; a mobile terminal of a cellular network**) and a base station (**a network**), said access to traffic channel is initiated by sending a "Packet Channel Request" message (**said first message is a packet channel request of the GPRS system**, see lines 30-32, col. 4) from a mobile unit to a base station (**a first message is sent from the terminal to the network**, see lines 30-32, col. 4). The message indicates the access type or the reason for the access (**the network identifies said first message as a radio resource request**, see lines 36-37, col. 4). After receiving a packet channel request (**said first message is received in the network**, see line 40, col. 4), the base station assigns Temporary Flow Identifiers (TFIs), Packet Data Traffic Channels (PDTCHs) and Uplink State Flags (USFs) to the mobile unit before any

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data transfer can commence (**the network allocates to the terminal the requested radio resource**, see lines 40-42, col. 4).

Regarding claim 4, Chang discloses that the "Packet Channel Request" message sent from the mobile unit to the base station indicates the access type (**the network identifies the message as a radio resource request**, see lines 30-37, col. 4). Although Chang does not specifically disclose the message format, it is inherent that the message comprises a bit pattern in a packetized system such as GPRS.

Regarding claim 8, Chang discloses that the Base Station Subsystem (**the network**) sends a "Packet Uplink Assignment" message (**sends packet uplink assignment**) message to the mobile units (**terminal**) once the TFIs, PDTCHs, and USFs are assigned (see lines 43-45, col. 4).

Regarding claim 13, Chang discloses the real time interactivity for packet switched sessions includes such services as real-time audio/video (**realtime service as transmission of speech and transmission of a video image**, see lines 65-67, col. 1, and line 3, col. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Spartz et al. (US Patent 5,878,036).

Chang discloses the radio resource allocation is achieved by establishing a open-ended Temporary Block Flow (TBF) between a mobile unit and the Base Station Subsystem (**establishing an open ended TBF connection between the terminal and the network**, see lines 59-60, col. 3 and lines 6-9, col. 4). Chang also discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show an unacknowledged mode of said TBF connection. However, Spartz discloses a GSM communications network (see Figure 1) in which the acknowledge message for channel request response from the BTS to subscriber unit is optional. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify radio link control mechanism of Chang such that there would be no acknowledgement message responding back to the packet channel request made by the mobile unit such as the unacknowledgement option taught by Spartz. Having provided a BTS that does not acknowledge the packet channel request sent from the mobile unit to the network would modify the radio link control mechanism and the BTS of Chang. The motivation to do so is to avoid the extra processing within the

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network when transmitting acknowledgement signal to the mobile unit because the call initiation setup time by the mobile unit would then be reduced.

5. Claims 3, 9-12, 14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Widegren et al. (US Patent 6,374,112).

Regarding claim 3, Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show a third message is sent from the mobile unit to the base station when allocating a radio resource for a non real-time service. However, Widegren discloses a multimedia call setup, comprising service nodes for analyzing the types of parameters involved for the call including data type such as real time versus non real-time (**non real-time service**, see lines 54-64, col. 11). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the radio resource allocation of Chang such that the packet channel request message would be analyzed to indicate that the request is made for non real-time service such as the data type analysis taught by Widegren. Having provided a data type parameter field in the packet channel request message and a processing means for determining non real-time service request would modify the radio resource allocation of Chang. The motivation to do so is to provide a mechanism for requesting and distinguishing a non real-time service from a real-time service in a packet switched system because non real-time service such as Internet data would also be required in a packet switched system.

Regarding claims 9 & 10, Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show a second

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message (packet channel request message) would be transmitted from the mobile unit to the base station prior to sending the first message (packet resource request message). However, Widegren discloses in a GPRS network (see element 20, Figure 1) where a mobile station requests a radio bearer service (**packet channel request message**) to establish a connection with a core network via the radio access bearer establishment routine (see lines 5-10 and block 81, Figure 4). Widegren further discloses a radio resource allocation routine for flexible mapping of bearer services onto different channel types after determining the quality of service parameters associated with the radio access bearer service request (**packet resource request message**, see lines 33-45, col. 12). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the radio resource allocation procedure of Chang such that the packet channel request message is sent prior to sending the packet resource request message such as the radio resource allocation procedures taught by Widegren. Having provided a radio resource allocation routine to handle the packet resource request would modify the radio resource allocation method of Chang. The motivation to do so is to assign different channel types based on different quality of service parameters associated with a radio bearer services request because various quality of services such as diversity handover and fast power control would be required in some circumstances.

Regarding claims 11 & 12, Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 10 above, except fails to explicitly show a the packet resource request message comprises a specific one bit long bit field. However, Widegren discloses a multimedia call setup in a GPRS network, comprises service nodes for analyzing the types of parameters involved for the call including data type such as

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real time versus non real-time (**non real-time service**, see lines 54-64, col. 11).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the radio resource allocation method of Chang such that the packet channel request message would include a one bit value to indicate whether a service is real-time or non real-time. Having provided a one-bit data type field in the packet channel request message and a processing means for analyzing the type of service requested would modify the radio resource allocation of Chang. The motivation to do so is to provide a mechanism for requesting and distinguishing a non real-time service from a real-time service in a packet switched system because both real-time service such as audio and video and non real-time service such as Internet data would need to be supported in a packet switched system.

Regarding claim 14, Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show the radio resource allocation is implemented on the RLC/MAC layer of GPRS system. However, Widegren discloses in a GPRS network (see Figure 1) that a connection (**radio resource allocation**) between a service node and a mobile station is handled at a radio link layer, comprising of a RLC/MAC layer (**radio resource allocation is implemented on the RLC/MAC layer**, see lines 32-35, col. 13). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the radio resource allocation method of Chang with that of Widegren such that the radio resource allocation method of Chang is implemented on the RLC/MAC layer such as RLC/MAC layer taught by Widegren. The motivation to do so is to utilize the available bandwidth

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efficiently because real-time service demands more bandwidth and a wider variety of Quality of Service requirements.

Regarding claim 17, Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show the network element comprises a means for receiving a message arriving from the mobile unit, and a means for allocating radio resource to the mobile unit. However, Widegren discloses a GPRS network comprising a RNC (BSC), a Base Station (BTS), a radio resource allocation, a connection to a Transceiver (ANT), and a routine for flexible mapping of bearer services onto different channel types (PCU, see Figure 1 and lines 33-35, Figure 6). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the network element of Chang with the aforementioned network components of Widegren such that radio resource allocation mechanism of Chang is shown using the network components taught by Widegren. The motivation to do so is to show the required components for detecting radio access bearer service request and for selecting the type of channel to carry information associated with the radio access bearer service request.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Erjanne (US Patent 6,490,271).

Chang discloses all the aspects of the claimed invention as set forth in the rejection of claim 1 above, except fails to explicitly show the internal components of the mobile unit for generating and transmitting said first message. However, Erjanne discloses a GSM system in which the mobile station comprises a Central Processing Unit

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(MPU), a Memory (MEM), a Radio Frequency block (RF) (see lines 66-67, col. 9 and lines 1-3, col. 10) and an antenna (see Figure 3). It is also well known in the art that a mobile unit would comprise a memory, a CPU, a RF block and an antenna in order to transmit messages to and receive messages from the base station. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the mobile station of Erjanne with that of Chang such that the mobile unit of Chang comprises the aforementioned internal components such as the mobile station taught by Erjanne. Having provided a RF block, a memory coupled to the CPU and an antenna connected to the RF block in the mobile station would modify the mobile station of Chang. The motivation to do so is to provide the components necessary in the mobile unit for generating and transmitting packet channel request message in a packet switched system.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure with respect to radio resource allocation in a packet switched data transmission system.

US Patent 6,608,832 to Forslow

US Patent 6,400,954 to Khan

US Patent 6,256,301 to Tiedemann, Jr. et al.

US Patent 6,501,741 to Mikkonen et al.

US Patent 5,802,465 to Hamalainen et al.

US Patent 6,175,737 to Kao

US Patent 6,587,457 to Mikkonen

US Patent 5,799,251 to Paavonen

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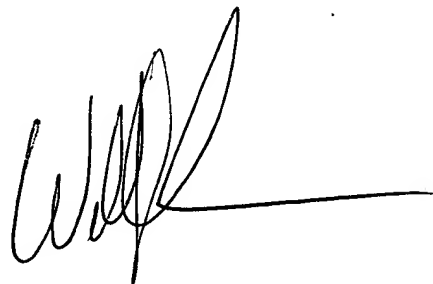
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 703-305-5300.

The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KDM
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A handwritten signature in black ink, appearing to read 'W. Chin', with a long horizontal line extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600